

## CLAIMS

I claim:

1. A method of using hop acids as an organic food supplement for livestock comprising delivering the hop acids for oral ingestion by mixing the acids with a livestock feed, wherein  
5 the hop acids are mixed with the feed in an amount to inhibit certain types of undesirable bacteria commonly found in the digestive systems of livestock.
2. The method of claim 1 wherein the hop acids as well as their corresponding salts are selected from at least one of the group consisting of alpha acids, beta acids, isoalpha acids, rho-isoalpha acids, tetrahydroisoalpha acids and hexahydroisoalpha acids.
- 10 3. The method of claim 2 wherein the alpha acids are selected from at least one of the group consisting of humulone, cohumulone, and adhumulone.
4. The method of claim 2 wherein the beta acids are selected from at least one of the group consisting of lupulone, colupulone, and adlupulone f.
5. The method of claim 1 wherein the amount of hop acid is 2 ppm of digestive system fluid.
- 15 6. A method for increasing food and energy uptake from a livestock feed by livestock comprising:  
administering to the livestock a feed having an effective amount of hop acid capable of decreasing the production of unoxidized carbon sources in a digestive system fluid of the livestock.
7. The method of claim 6 wherein the hop acids are selected from at least one of the group  
20 consisting of alpha acids, beta acids, isoalpha acids, rho-isoalpha acids, tetrahydroisoalpha acids and hexahydroisoalpha acids.
8. The method of claim 7 wherein the alpha acids are selected from at least on of the group consisting of humulone, cohumulone, and adhumulone.
9. The method of claim 7 wherein the beta acids are selected from at least one of the group  
25 consisting of lupulone, colupulone, and adlupulone.
10. The method of claim 6 wherein the amount of hop acid is 2 ppm of digestive system fluid.
11. The method of claim 6 wherein the livestock is selected from the group consisting of cattle, poultry, horses, pigs, and zoo animals.
12. The method of claim 1 further comprising administering the hop acid capable of increasing  
30 the level of propionate in the digestive system fluid.
13. An animal feed comprising  
a feed plant selected from at least one of the group consisting of corn, barley, alfalfa, wheat,

and sorghum, and

an effective amount of hop acid capable of inhibiting certain types of undesirable bacteria commonly found in the digestive systems of livestock.

14. The animal feed of claim 13 wherein the effective amount of hop acid is from about 1 ppm  
5 to about 30 ppm of digestive system fluid of the livestock.